Alternative: Manage Growth and Land Use

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1. Summary of the Alternative

This white paper addresses the question of whether and how growth should be managed when water is not available or is not likely to be available in the future. It examines the balance between supply and demand, rather than technical measures to increase supply or reduce per capita demand. Some issues related to land use and growth, such as landscaping and water reuse, are covered in other papers (e.g., DBS&A, 2002).

Managed growth normally means exercising some degree of control over the timing, location, type, and design of growth. What distinguishes managed growth from the type of growth dealt with by comprehensive plans or left to market forces is the addition of a time factor, that is, the timing of growth. Managed growth does not necessarily imply limits to growth unless such limits are specifically built in.

Managed growth systems have been adopted for a number of reasons, such as to ensure that the water supply is adequate for development, reduce governmental costs, ensure adequate infrastructure, preserve resource or habitat lands, and focus growth into more community-oriented growth patterns. What little experience exists in managing growth because of lack of available water appears to have come from California, especially along the Pacific Coast in areas not having access to major water sources in that state. While a community may have many reasons for managing growth, the focus of this discussion is on the mechanisms available to control growth in areas with a limited water supply.

Managed growth systems tend to fall into three categories (although some systems are hybrids):

- Designating geographical limits for growth
- Conducting project-level analyses for each development
- Setting numerical limits on rate of growth

Moratoriums are not generally considered a technique for managed growth, although they could be thought of as a numerical limit system with a growth rate of zero. Moratoriums, however, are a common response to water shortages.

2. Technical Feasibility

All of the systems outlined in Section 1 are technically feasible, and all have been adopted in at least one other jurisdiction in the U.S. The relevant technical feasibility question asks which system, or combination of systems, is most appropriate for the jurisdictions within the Jemez y Sangre regional water planning area.

As noted in Section 1, there are three general types of managed growth systems: geographical limits, project-level analyses, and numerical limits. Several important lessons have evolved from the experience of implementing these systems:

- Managed growth must not just address one issue. To be effective, any land-use system must address multiple community objectives.

- Any system must be perceived as generally fair in how it treats affected people and groups.

- The system should provide as much certainty, preferably early in the development process, as possible.

- Implementation and administration must be carefully thought out in advance.

- As with any properly designed program, there should be an evaluation and feedback component that indicates how the program is working and what changes need be made.

- When selecting any type of growth management system that relates to water supply, it is important to develop a sustainable system, rather than one that will address the supply issue only for a fixed number of years.

2.1 Geographical Limits

One of the oldest managed growth systems in the United States is that of geographical limits. Natural geographic features have always limited growth, and boundaries of local agencies, especially water and wastewater districts, have affected growth patterns. In 1969, however, the Town of Ramapo, New York, adopted a landmark managed growth system specifically to control sprawl that had disrupted municipal finances and the ability of the town to preserve its character. The Ramapo system set a sequential development system that controlled when development could take place; it differentiated development areas and established a rating system for development proposals. Although the system was tied to the ability to provide infrastructure, the issue was not unavailability of resources but rather the ability of the public agencies to finance and provide services in an efficient manner.

The Ramapo system was controversial and became very politicized. It was repealed in 1983, 14 years after adoption, when the majority on the town board shifted. The main concern was that town growth had slowed substantially, due to inadequate funding of necessary infrastructure.” Since the Ramapo experience, however, the concept of treating potential growth areas differently using growth tiers has been refined and adopted by a number of other jurisdictions such as San Diego County, California.

The other type of geographically oriented managed growth system is to draw a line around a city, usually called an urban growth boundary (UGB), beyond which no city growth can take place for a fixed number of years. Portland, Oregon, which adopted a UGB in 1994, is perhaps the best known example. (Since the UGB adoption, Portland has become increasingly known as a very desirable place to live, although this may be due more to other factors, such as infill development policies and improved transit, than to the UGB alone.) A number of other cities, especially in California, also have adopted UGBs. When considering adopting a UGB, communities need to be aware of the potential for higher costs and higher in-fill densities, as well as the potential for growth to be shifted to less expensive adjacent communities.

The issues usually raised about UGBs are the impact on land costs, especially as they affect affordable housing, and the nature of development outside the UGB. Impacts on housing are addressed in Section 7. Inappropriate development outside of UGBs has been a problem, leading to the conclusion that UGBs work best when there is close city-county cooperation or, at least, compatible policies. In an extraterritorial zone outside of a municipality, a concurrency system, where developers demonstrate that all services are available, may best manage growth (Section 2.2).

Using geographically oriented managed growth systems to deal with absolute limits on water may not be the best approach because (1) the link between amounts of water and areas of land is not very direct, (2) these systems deal best with a logical expansion of infrastructure, not an often-erratic supply of water, and (3) they affect land consumption but may have little impact on the overall amount of development. However, growth systems based on location may be useful if water supply is one of several goals. Location of development is important when goals such as increasing a sense of community, collecting wastewater, reducing vehicle miles traveled, and conserving resources are taken into account. An interesting project is currently taking place in Watsonville, California, where a quite lengthy consensus-building project has produced a geographically oriented growth strategy that deals with multiple issues, including a lack of water for urban development, agriculture, and habitat preservation.

Rio Arriba adopted a new code in 2001 that requires all developers to preserve 70 percent of the land for open space or agriculture. For example, development of a 10-acre parcel of land must preserve 7 acres as open space and restrict development to 3 acres.

2.2 Project-Level Analyses

This approach provides that for each project subject to the system, the question is asked: "Is there sufficient infrastructure (such as water) available to serve the project." It differs from the third approach, numerical limits, because it focuses on development approvals for specific projects.

The most well known application of this approach is the "concurrency" system mandated for all local governments in Florida. Under this system, before a development can be approved, the applicant must show that water, wastewater, solid waste, transportation, and park facilities adequate to serve the project are currently available or available concurrent with the need for such infrastructure. Most of the attention on this approach has focused on transportation, the area with the most unmet needs. No other state has mandated this approach, but other communities, such as Washoe County, Nevada, have adopted concurrency programs. Santa Fe County requires developers to demonstrate that water is available for 100 years, which has impacted the density of development in the County, outside the City limits.

In October 2001, California adopted a new law (SB 221) that for any project of 500 or more residential units requires a local government or water provider to make a finding, based on substantial evidence, that water is available without putting the existing community at risk. Some infill and low-income projects are exempted. While the law is too new to allow any evaluation, it is being touted as a major advance in linking land use planning with water supplies. The primary concern of water providers is that it will lead to a battle of experts over the availability of groundwater.

There are several problems with this approach.

- The decision point is very late in the planning and development process. More certainty would be provided to everyone if decisions could be made on a longer-range basis.

- The process focuses on an individual project rather than taking a comprehensive view of how potential development relates to the total water supply. The proponent of an individual project is usually not equipped, technically or financially, to undertake water supply assessments. The local government, on the other hand, loses its ability to encourage the type of development it desires.

- The decision-making process must be very rigorously defined and must not contain loopholes. The New Mexico Subdivision Act, for example, includes provisions that the subdivider must show that sufficient water will be available in the future, but these provisions do not appear to provide an effective mechanism for actually ensuring that water will be available. The provisions apply only to counties; individual domestic wells are exempted, and adequate technical data are often lacking. In addition, many counties exclude individual lot splits from the review process, which creates a large loophole and fosters poor planning for infrastructure.

- There are some bookkeeping issues in keeping track of development capacity, and the system must deal with multi-phased projects where water for later phases is not needed for a number of years.

There is, however, one big advantage to a well defined system: projects do not get approved unless water is or will be available. This simplicity and finality can be quite appealing.

2.3 Numerical Limits

In 1972, the City of Petaluma, California, adopted one of the first managed growth systems based on numerical limits. The system provided for 500 housing units per year, evenly divided between single-family and multiple-family building permits. This limit was not based solely on availability of infrastructure, but also on the city’s desire to preserve its small-town character, open space, and low population density.

Since that time, numerous cities have adopted numerical limits to growth; most have dealt only with residential growth, but several have dealt with commercial growth. Several cities in California, such as San Luis Obispo and Morro Bay, have adopted annual numerical limits based directly on limited water supplies. Other California communities, such as Marin County, have indirectly limited growth by not approving bond issues for water facilities. The City of Santa Fe is currently debating the pros and cons of adopting a water budget that would limit the number of commercial and residential hook-ups each year to about 1 percent of the annual water demand.

The operation of a numerical system is quite straightforward, but its design should address a number of issues:

- *Basis for setting the limit.* If a limit is based on water supply, the amount of available water should be known with some degree of certainty. This is difficult to predict, however, because water supply is partially dependent upon rainfall, groundwater supplies are hard to measure, and future environmental and water right constraints are not always as definite as might be desired.

- *Annual limits or budgets.* Most numerical growth limits are annual limits, which appears to be a reasonable approach. However, the system must be able to deal with (1) large projects that would use up most of, all of, or more than one year's water allocation and (2) the potential carryover of unused allocations. Note that the annual period need not begin on January 1 of each year—a different starting point, based on when an annual assessment of water availability can be made, may be more useful.

- *Changeability of limits.* The annual allocation could be subject to change each year or could be set for a fixed period of time. (As a legal matter, an allocation could probably be changed in the future, but not providing for change makes changes more politically difficult.) The advantage of easy changes is increased flexibility to respond to changed conditions, while the disadvantage is that the projections of the amount of available water probably should be based, at least in part, on historical averages, which do not change rapidly.

- *Spreading out development.* The annual allocation is normally spread out over some period of time. For instance, if a community has 1,000 acre-feet of excess water, then the available supply would be divided by the number of years within a specified period to produce an annual budget or allocation.

- *What is allocated.* A numerical limit must limit something tangible. Most communities that have adopted a numerical system have limited building permits. Alternatively, the limits could apply to water hookups. Those communities that limit non-residential development usually limit square feet.

- *Timing of allocation.* Whatever budget is established, the numbers should be known as soon as possible in order to provide all parties with more certainty so that, for instance, developers and builders do not plan for projects that cannot get built. Also, the further along a project gets in the approval process, the harder it is to stop.

- *Bookkeeping issues.* The system must keep track of what potential development(s) has been allocated water. This is not a particular problem if the permitting agency is the same as the water provider. If not, the system must be structured to address this issue.

- *Residential vs. non-residential.* If water is an absolute limit, as it appears it may be in this regional water planning area, then both residential and non-residential uses must be included. The question is what percentage of water is allocated to each. It could be based on historical data, but this may not represent the vision that each community has for itself.

- *Residential uses.* All residential uses are not the same. Some communities, such as Petaluma, distinguish between single-family and multiple-family uses. Most communities with a numerical system have special provisions for affordable housing.

Location can also be one of the criteria for allocations; for example, if a community desires infill development or wants to encourage high-density neighborhood centers, it could give first priority to these efforts.

- *Non-residential uses.* While there are several types of residential uses, there are many more types of non-residential uses, ranging from government offices, retail stores, hotels, to golf courses. If the system is to make distinctions, it must employ some type of criteria, such as maximizing number of jobs, maximizing good-paying jobs, maximizing jobs that match skills of existing population, maximizing tax revenues, supporting social, cultural and environmental goals, or others.

Another type of numerical approach relies on performance standards to determine if a development can be built. An innovative system of this type was used for the Disney World area in Florida. This approach allows a range of mixed-uses but requires that development comply with design guidelines. Development is limited by the amount of water used, amount of wastewater and solid waste generated, and number of automobile trips generated. In other words, development is regulated by impacts, not by indirect and misunderstood measures such as density. This approach encourages efficient and sustainable development because the builder has an economic incentive to minimize impacts in order to maximize the number of residential units or amount of square footage.

2.4 Other Approaches

As noted in Section 1, moratoriums are generally not considered a managed growth technique, although they may be used when water is short. But in fact, they may be the ultimate managed growth technique. Moratoriums are commonly imposed in three circumstances: (1) in response to an short-term problem, such as an unexpected failure of a water well, (2) when a critical resource is simply not available or (3) when development is temporarily halted while a plan is being prepared.

Another alternative to managed growth is to rely on a market approach. The market approach (i.e., allowing housing to be built as needed based on demand) assumes that the system will balance itself without government intervention. There are several problems with a market approach in an area that has an acknowledged water supply issue:

- Industry and business do not like uncertainty, and new businesses will be very unlikely to locate in this region if water supplies are not reliable, frustrating the economic development objectives of the communities in the region.

- The market approach will lead to overbuilding in relation to average water supply. In good water years, building will take place that will result in a subsequent shortage of water in lean water years or when the water runs out. This boom and bust cycle has substantial economic and social impacts.

- Water supply is related to money and energy; given enough money and a supply of energy, water can be obtained from somewhere. But New Mexico is not a wealthy state and may find it hard to compete with cities in Arizona, Nevada, California, and other states for water from water-rich areas. And even assuming that the energy is available, water from other sources, such as desalination of ocean water, will be very expensive to produce and transport.

3. Financial Feasibility

The out-of-pocket costs of adopting and implementing a managed growth system are not substantial. The costs of drafting the ordinance(s) and administering the system should be quite small. A potentially significant cost is that of preparing and updating the necessary water supply studies. However, the costs of these studies should probably be allocated among local governments, pueblos, and the State of New Mexico, and the costs to any one entity should thus not be substantial. These studies may be done anyway, regardless of the adoption of managed growth systems. If so, they do not represent any additional cost attributable to the managed growth systems.

4. Legal Feasibility

Managed growth systems have been litigated in New York, California, and a number of other states. Well-designed systems have almost always been upheld. The typical issues that have been raised in these cases have included a taking of private property without just compensation, violation of due process rights, and infringement upon the right to travel.

These cases have not generally dealt with the absolute shortage of a necessary resource, such as water. Courts almost always allow quite restrictive actions to be taken in emergency situations or when an agency has little or no choice because of natural conditions. Building moratoriums due to lack of water are examples of approaches that should be upheld. There is a moratorium case currently before the U.S. Supreme Court; however, the moratorium in question was not one based on an emergency or lack of a resource, but on the desire to have a temporary halt in construction while a plan and the corollary regulations were prepared and adopted.

On the other hand, at least four appellate court decisions in California have invalidated planning processes due to inadequate discussion of water. Although these decisions were interpretations of the California Environmental Quality Act, which does not apply in New Mexico and in any case are not binding in New Mexico, they do indicate a trend in recognizing the importance of linking water supplies and land use planning.

Another line of cases in some states, such as California, deal with the responsibility of water agencies to provide water. These cases support the proposition that water agencies are under no responsibility to provide water they do not have, but cannot use unavailability of water as an excuse not to provide service unless there is, in fact, a lack of water.

The first legislation requiring subdivision development in New Mexico was the 1963 Subdivision Act. This act, passed in response to complaints of consumer fraud (such as developments with quarter-acre lots requiring wells and septic tanks), gave local government control, primarily over misrepresentation. The 1973 Land Subdivision Act directs the State Engineer to provide assistance to counties drafting regulations. In response, the State Engineer requires that subdivisions containing 25 or more lots averaging 10 acres or less in size must have a central water supply. The 1994 Subdivision Act further regulates subdivision development by requiring that counties develop regulations addressing assurance of water availability to meet the maximum annual requirements of subdivisions (47-6-9 NMSA).

5. Effectiveness in Either Increasing the Available Supply or Reducing the Projected Demand

To judge the effectiveness of the types of managed growth systems and the market approach, the following five criteria are used:

- *Leveling demand:* Is the system able to level or evenly spread out demand over time so that severe shortages that disrupt the economy and environment do not occur?

- *Buying time:* Does the system buy time for bringing new water supplies on line or implementing new measures to reduce demand?

- *Limiting growth:* Does the system limit growth if absolutely no more water is available or is available at prohibitive costs?

- *Balancing growth:* Does the system balance types of development, taking into account water consumption and other community goals?

- *Contributing to other public policies:* Does the system contribute to, or is it at least consistent with, comprehensive plans and other public policies?

The effectiveness of the three categories of managed growth, as well as that of a market approach, based on these criteria is summarized in Table 1.

Table 1. Effectiveness of Managed Growth Approaches

Criterion	Approach: Geographic Limits	Approach: Project-Level Supply Analysis	Approach: Numerical Limits	Approach: Market Approach
Leveling demand	Low	Low-medium	High	Low
Buying time	Low	Medium	High	Low
Limiting growth	Low-medium	Medium-high	High	Medium-high
Balancing growth	Low	Low-medium	Medium-high	Low
Contributing to other public policies	Medium	Low	Medium-high	Low-medium

Table 1 is obviously somewhat subjective; its primary purpose is to facilitate discussion, not provide a definitive answer. In addition, it does not consider hybrid systems.

The following example shows how effective an approach based on numerical limits can be. If one assumes a normal population increase in the basin of approximately 57,600 people between 2000 and 2020 (Bureau of Business and Economic Research, 2000, Table 2-14), a water consumption of 150 gallons per capita per day, and a 50 percent reduction in population growth, the annual water savings would be more than 1.575 billion gallons (about 4,800 acre-feet). Over a 60–year period, a 50 percent reduction in projected growth would reduce demand by about 15,500 acre-feet per year (afy) below the anticipated increased demand of 31,000 afy (based on a per capita demand of 0.18 afy per capita in the Santa Fe Sub-basin and 0.15 afy per capita in all the other sub-basins).

6. Environmental Implications

Managed growth systems need not have any significant adverse environmental impacts, and to the extent that they have any impacts, the overall result should be positive. Ensuring that demand is generally consistent with supply should help to protect habitat areas during years of limited water availability. If an absolute limit to growth is imposed because of an absolute limit of water, the system should prevent overbuilding that would result in intense battles over water for environmental purposes.

If the system took locational issues into account and resulted in more compact development patterns, some water could be saved. While the location of development, including sprawl, is clearly related to energy consumption, it has less of an impact upon total water consumption. Reducing sprawl, however, would tend to preserve the productivity of existing individual wells and would reduce the potential of groundwater contamination from septic tanks.

Managing growth in some rural areas could produce the additional positive benefit of protecting watershed resources, thereby enhancing watershed health and productivity.

7. Socioeconomic Impacts

The Jemez y Sangre region of northern New Mexico is distinguished by its rural and agricultural character, predominantly Indian and Hispano population, localized land-based economies, and pockets of persistent poverty. In particular, its Indian and Hispano populations represent some of the most unique cultures in the world, products of a long history of continuous human habitation, adaptation, and cultural blending. Land-based Indian and Hispano cultures still thrive, carrying on centuries-old cultural traditions that include distinctive land-use and settlement patterns, agricultural and irrigation practices, natural resource stewardship practices, social relations, religious activities, and architecture. An example is the ancient acequia tradition, which is vital both as a sustainable irrigation system for subsistence and market agriculture and as part of the social glue that holds together rural communities.

The survival of these deeply rooted local traditions is essential for the continuity of rural culture and communities and, in turn, for the local tourism industry, which is built in large part upon the singular cultural and historical personality of the region. Preservation of these traditions is therefore an important consideration in determining the socioeconomic and cultural impacts of regional water planning.

Managing growth and land use would have the direct benefit of protecting existing traditional rural land and water uses and all the associated socioeconomic and cultural values. Through comprehensive planning and growth management, this alternative would optimize conservation and watershed health and productivity. Management mechanisms might include sensible and coherent land use zoning, enforcement of water-related restrictions under the New Mexico Subdivision Act, restriction of inappropriate water-guzzling industries and activities, management of suburban and ex-urban sprawl, and development of efficient municipal domestic water supplies to replace unnecessarily consumptive private wells. Specific types of socioeconomic implications of growth, or lack thereof, include the impacts on housing costs, tax revenues, the construction industry, tourism, agriculture, and specific groups of people.

The first issue to be dealt with regarding socioeconomic implications is the cause of any impacts. If water is limited or nonexistent, the impacts are caused by a lack of water, not the existence of a managed growth system. If the managed growth system, however, favors one type of development over another or affects when or where a project is built, then it is legitimate to ask what impacts are properly attributed to the managed growth system.

It is difficult to isolate managed growth from all the other potential causes of changes in such issues as housing affordability. By their nature real estate markets are quite local, making comparisons between cities very difficult. This is best indicated by the current and very vigorous debate over the impacts of growth policies in Portland on the cost of housing and on other socioeconomic indicators.

As noted earlier, businesses like certainty and are reluctant to expand or move to areas with unstable supplies of basic necessities such as water. Agriculture and the communities it supports also depend upon a reliable supply. To the extent that managed growth smooths out water demand and prevents overbuilding, it will encourage these activities. It also will prevent economic disruptions to employees whose jobs are affected by water shortages. A managed growth system that favors job-creating uses should have an additional positive impact.

8. Actions Needed to Implement/Ease of Implementation

The basic steps in implementing a managed growth system are:

- Analyze water availability and demand.
- Conduct an educational and consensus-building program to formulate an approach.
- Undertake any necessary intergovernmental coordination activities.
- Decide how the managed growth initiative should be integrated with other community goals.
- Prepare and adopt an ordinance.
- Implement the ordinance.
- Evaluate the managed growth changes and make improvements as necessary.

Some of the above steps have already been done. The Jemez y Sangre Water Planning Council and other agencies continue to analyze water supply and demand. They also have initiatives to educate and build consensus, such as this charrette. The City of Santa Fe is in the process of analyzing a water budget, and other jurisdictions are also taking a serious look at water and growth issues.

In dealing with water issues, a regional approach has been shown to be the most effective. It is not always possible, however, to adopt regional ordinances; instead, ordinances will most likely be adopted by individual governmental agencies. However, their effectiveness will be greatly improved by close coordination with other governmental agencies so that overall regional objectives are not compromised.

9. Summary of Advantages and Disadvantages

Advantages and disadvantages of managed growth are summarized both in terms of adopting any managed growth system as compared with doing nothing and in terms of each managed growth approach.

9.1 Adopting a Managed Growth System

The advantages of adopting a managed growth system are:

- Levels the demand for water
- Allows time to solve problems
- Prevents over-building
- Promotes balanced growth (i.e., can tailor development to constraints)
- Integrates better with other public policies

The disadvantages of a managed growth system are:

- Requires background studies
- May be politically difficult
- Has some administrative costs
- Works best in short term when limits are known
- May have some unwanted socioeconomic impacts

9.2 Managed Growth Alternatives.

The three types of managed growth systems (geographical limits, project-level analysis, numerical limits) are pretty much all equal with respect to financial feasibility, legal feasibility, environmental implications, socioeconomic implications, and ease of implementation. The numerical limits approach, however, appears to be the most effective. Coincidentally, it is the one that has received the most attention within this region for dealing with water supply issues.

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